

ABSTRACT OF THE DISCLOSURE

A common narrow-band speech signal is expanded into a wide-band speech signal. The expanded speech signal gives the impression of a wide-band speech signal regardless of what type of vocoder is used. Extending the narrow-band
5 speech signal into a lower range involves analyzing the narrow-band speech signal to generate one or more parameters, and synthesizing a lower frequency-band signal based on at least one of the one or more parameters. The synthesized lower frequency-band signal is then combined with a signal that is derived from (e.g.,
10 via up-sampling) the narrow-band speech signal. In preferred embodiments, a pitch frequency parameter is generated, and generation of the lower frequency-band signal includes generating continuous sine tones that are frequency shifted with the pitch frequency parameter.